INTERNATIONAL SEARCH REPORT



Relevant to claim No.

1-7

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H04N7/26

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 HO4N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic delabase consulted during the infernational search (name of data base and, where practical, search terms used)

Citation of document, with Indication, where appropriate, of the relevant passages

"MUNICH MEETING OF MPEG-4 WORKING GROUP.

REPORT ISO/IEC JTC1/SC29/WG11 MPEG4/N1172"

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

INTERNALIONAL ORGANIZATION FOR STANDARDIZATION ORGANIZATION INTERNATIONALE DE NORMALISATION, XX, X 1996, pages 3-49, XP002047798 page 5; figure 3.1.2 page 11, paragraph 3.3.2 - page 15, la 11ne -/	
X Further documents are listed in the continuation of box C.	extent family members are listed in annex.
A document defining the general state of the art which is not considered to be of particular relevance in the international considered to be of particular relevance in the international considered on the international considered considered on the international considered considered on the international considered cons	used of particular relevance; the cleahed invention of the considered novel or cannot be considered to a particular one of the considered to an inventive slep when the document is taken done ent of particular relevance; the cleatined invention of the considered to involve an inventive step when the considered to the considered t
	f mailing of the international search report

02/08/2004

Schoeyer, M

Authorized officer

22 July 2004

ming eutoriess of nei ISA European Patent Cfflca, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016

Name and mailing eddress of the ISA

INTERNATIONAL SEARCH REPORT

International Application No
T/IB2004/001373

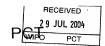
C.(Continue)	tion) DOCUMENTS CONSIDERED TO BE RELEVANT	₩617 IB200	1, 0010, 0
·	Citation of document, with indication, where appropriate, of the relevant passages		Relevant to claim No.
Y	EBRAHIMI T: "MPEG-4 video verification model: A video encoding/decoding algorithm based on content representation" SIGNAL PROCESSING. IMAGE COMMUNICATION, ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, NI., vol. 9, no. 4, 1 May 1997 (1997-05-01), pages 367-384, XP004075336 ISSN: 0923-5965 page 371, left-hand column, line 21 - page 372, left-hand column, paragraph 2.1 page 373, right-hand column, paragraph 2.2 - page 376, left-hand column, paragraphs 3.1,2		1-7
Y	EP 0 891 093 A (MATSUSHITA ELECTRIC IND CO LTD) 13 January 1999 (1999-01-13) abstract column 22, line 31 - column 24, line 18		1-7
A .	WO 03/034743 A (KONINKL PHILIPS ELECTRONICS NV) 24 April 2003 (2003-04-24) abstract page 1, line 1 - page 3, line 6		1-7
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No TCT/IB2004/001373

Patent document cited in search report	Publication date		Patent family member(s)	Publication date
EP 0891093 A	13-01-1999	JP	3191922 B2	23-07-2001
		JP	11088881 A	30-03-1999
		CN	1312638 A	12-09-2001
		CN	1312639 A	12-09-2001
		CN	1213246 A	07-04-1999
		DE	69808188 D1	31-10-2002
		DE	69808188 T2	30-04-2003
		DE	69818523 D1	30-10-2003
		DE	69822002 D1	01-04-2004
		EP	1087623 A1	28-03-2001
		EP	1087624 A1	28-03-2001
		· EP	1229739 A2	07-08-2002
	,	EP	0891093 A2	13-01-1999
		ES	2207455 T3	01-06-2004
		ES	2184177 T3	01-04-2003
	100	JP	3191925 B2	23-07-2001
	•	JP	2001177835 A	29-06-2001
		JP	2001186522 A	06-07-2001
		TW	417388 B	01-01-2001
		US	2002054640 A1	09-05-2002
		US-	6466697 B1 ·	15-10-2002
		. US	6665445 B1	16-12-2003
		US	2001013952 A1	16-08-2001
WO 03034743 A	24-04-2003	WO	03034743 A1	24-04-2003
		US	2003128757 A1	10-07-2003



see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing

(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference see form PCT/ISA/220

PCT/B2004/001373

FOR FURTHER ACTION See paragraph 2 below

International application No.

International filing date (day/month/year) Priority date (day/month/year) 06.05.2003 28.04.2004

International Patent Classification (IPC) or both national classification and IPC H04N7/26

Applicant

KONINKLIJKE PHILIPS ELECTRONICS N.V.

PriorIty

- This opinion contains indications relating to the following items: 1.
 - Rox No. 1 Basis of the opinion
 - Box No. II
 - Non-establishment of opinion with regard to novelty, inventive step and industrial applicability Box No. III
 - Lack of unity of invention ☐ Box No. IV
 - Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial D Box No. V
 - applicability; citations and explanations supporting such statement
 - ☐ Box No. Vi

 - Certain documents cited Box No. VII Certain defects in the international application
- FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the international Preliminary Examining Authority (IPEA'). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1 bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465

Authorized Officer

Schoeyer, M

Telephone No. +49 89 2399-2136



WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

4. Additional comments:

International application No. PCT/IB2004/001373

_	Box	, NI	. I Basis of the opinion
_			
١.	Witi the	lang	gard to the language, this opinion has been established on the basis of the international application in juage in which it was field, unless otherwise indicated under this item.
		lan (ur	s opinion has been established on the basis of a translation from the original language into the following guage , which is the language of a translation furnished for the purposes of international search der Rules 12.3
2.	Wit	h re	gard to any nucleotide and/or amino acid sequence disclosed in the international application and ary to the claimed invention, this opinion has been established on the basis of:
	a. t	уре	of material:
			a sequence listing
		Π.	table(s) related to the sequence listing
	b. f	orm	at of material:
			in written format
			in computer readable form
	c. 1	ime	of filing/furnishing:
			contained in the international application as filed.
			filed together with the international application in computer readable form.
			furnished subsequently to this Authority for the purposes of search.
3.		ha co	addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto is been filed or furnished, the required statements that the information in the subsequent or additional pipes is identical to that in the application as filed or does not go beyond the application as filed, as propriate, were furnished.

Box No. II Priority

- The following document has not been furnished:

 - □ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

- 2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43bis.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
- 3. Additional observations, if necessary:

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability, citations and explanations supporting such statement

1. Statement

 Novelty (N)
 Yes: No: Claims No: Claims
 1-7

 Inventive step (IS)
 Yes: Claims No: Claims
 1-7

 Industrial applicability (IA)
 Yes: Claims
 1-7

Citations and explanations
 see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

No: Claims

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item V.

- The following documents are referred to in this communication:
 - D1: "MUNICH MEETING OF MPEG-4 WORKING GROUP. REPORT ISO/IEC JTC1/SC29/WG11 MPEG4/N1172" INTERNATIONAL ORGANIZATION FOR STANDARDIZATION - ORGANISATION INTERNATIONALE DE NORMALISATION, XX, XX, 1996, pages 3-49, XP002047798
 - D2: EBRAHIMI T: "MPEG-4 video verification model: A video encoding/decoding algorithm based on content representation" SIGNAL PROCESSING. IMAGE COMMUNICATION, ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, NL, vol. 9, no. 4, 1 May 1997 (1997-05-01), pages 367-384, XP004075336 ISSN: 0923-5965
 - D3: EP 0 891 093 A (MATSUSHITA ELECTRIC IND CO LTD) 13 January 1999 (1999-01-13)
- 2 Inventive Step
- 2.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject matter of claims 1, 2, 4, 5, 6 does not involve an inventive step in the sense of Article 33(3)PCT.
- 2.1.1 Document D1, which is considered to represent the most relevant state of the art to the subject matter of claim 1, discloses:

An encoding method which is applied to an input video sequence corresponding to successive scenes subdivided into video object planes (see abstract) and generating, for coding all the video objects of said scenes, a coded bitstream the content of which is described by means of a bitstream syntax allowing to recognize and decode all the elements of said content, including temporal prediction, in which the temporal prediction being chosen within a list comprising (see paragraph 3.3.2) the following situations:

- the temporal prediction is formed by directly applying the morion field sent by the encoder on one or more reference pictures;
- the temporal prediction is a copy of a reference image;
- the temporal prediction is formed by the temporal interpolation of the

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motion field:

 the temporal prediction is formed by the temporal interpolation of the current motion field and further refined by the motion field sent by the encoder:

Differently than shown in D1 it is claimed in claim 1 that the channels are described independently and that additional syntactic information is included at slice level in the bitstream.

The skilled person working according to the method of D1, and confronted with the problem of improving the coding efficiency of the method of D1 will be aware of document D3. Document D3 shows (see e.g. figure 1) the inclusion of additional syntactic elements to include motion estimation for the different channels, As at is well known in the art to provide coding specifics at slice level, the skilled person will readily considered to implement the syntactic element at slice level and will arrive at the full combination of features of claim 1, without the exercise of any inventive step.

Incidently it is noted that subject-matter of claim 1 is also considered to lack inventive step based on the combination of documents D2 and D3 for substantially the same reasoning as set out above.

2.1.2 Independent claim 2:

The subject-matter of claim 2 relates to an encoding method which substantially corresponds to that of claim 1, with the difference that the syntactic elements are placed at macroblock level. The inclusion of a syntactic element at macroblock level is considered to be obvious for similar reasons as set out above for claim 1.

2.1.3 Independent claim 4

The subject-matter of claim 4 relates to an encoding apparatus functioning corresponding to the method of claims 1 and 2. Consequently the subject-matter of this claim is considered to lack inventive step for substantially the

same reasons as set out above for claim 1.

2.1.4 Independent claim 5

The subject-matter of claim 5 relates to a signal which has been generated in accordance with a method as set out in claims 1 or 2. Consequently the subject-matter of this claim also lack inventive step for substantially the same reasons as set out above for claims 1 and 2.

2.1.5 Independent claim 6

The subject-matter of claim 6 relates to a method for decoding a signal which has been generated in accordance with a method as set out in claims 1 or 2. Consequently the subject-matter of this claim also lack inventive step for substantially the same reasons as set out above for claims 1 and 2.

2.1.6 Independent claim 7

The subject-matter of claim 7 relates to an decoding apparatus functioning corresponding to the method of claims 6. Consequently the subject-matter of this claim is considered to lack inventive step for substantially the same reasons as set out above for claim 6.

2.1.7 Dependent claim 3

It is well known in the art to include a syntactic element having the same meaning for different channels, consequently the subject-matter of claim 3 is obvious.

3. Article 33(4)

The subject-matter of claims 1-7 is industrially applicable in the field of image encoding.

Re Item VII.

International application No.

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (SEPARATE SHEET)

PCT/IB2004/001373

Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the documents D1-D3 is not mentioned in the description, nor are these documents identified therein.

Re Item VIII.

Article 6 PCT

The requirements of Article 6 PCT have not been met because claims 4 and 7 are not fully clear.

It is not clear what features the encoder and the decoder according to claims 4 and 7 actually comprise.

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference FR030047WO	FOR FURTHER ACTION	See item 4 below
International application No. PCT/IB2004/001373	International filing date (day/month/year) 28 April 2004 (28.04.2004)	Priority date (day/month/year) 06 May 2003 (06.05.2003)]
International Patent Classification (IPC) or national classification and IPC 7 H04N 7/26		
Applicant KONINKLIJKE PHILIPS ELECTRONICS N.V.		

1.	This international preliminary re International Searching Authorit	port on patentability (Chapter I) is issued by the International Bureau on behalf of the yunder Rule 44 bis.1(a).	
2.	This REPORT consists of a total of 8 sheets, including this cover sheet.		
	In the attached sheets, any refere to the international preliminary r	nce to the written opinion of the International Searching Authority should be read as a reference eport on patentability (Chapter I) instead.	
3.	This report contains indications i	relating to the following items:	
	Box No. I	Basis of the report	
	Box No. II	Priority	
	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	
	Box No. IV	Lack of unity of invention	
	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	
	Box No. VI	Certain documents cited	
	- Box No. VII	Certain defects in the international application	
	Box No. VIII	Certain observations on the international application	
4.	The International Bureau will cornot, except where the applicant mate (Rule 44bis .2).	nmunicate this report to designated Offices in accordance with Rules $44bit$, $3(e)$ and $93bit$, 1 but akes an express request under Article $23(2)$, before the expiration of 30 months from the priority	

	Date of issuance of this report 11 November 2005 (11.11.2005)
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Idhir Britel
Facsimile No. +41 22 740 14 35	Telephone No. +41 22 338 70 60

Form PCT/IB/373 (January 2004)

RECEIVED . 2 9 JUL 2004 PCT

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

Priority date (day/month/year)

(PCT Rule 43bis.1)

Date of mailing (day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference

FOR FURTHER ACTION See paragraph 2 below

see form PCT/ISA/220 International application No. PCT/B2004/001373

International filing date (day/month/year)

06.05.2003

International Patent Classification (IPC) or both national classification and IPC H04N7/26

Applicant

To:

KONINKLIJKE PHILIPS ELECTRONICS N.V.

This opinion contains indications relating to the following items:

28.04.2004

- Box No. 1 Basis of the opinion Priority
- Box No. II
- ☐ Box No. III
- Non-establishment of opinion with regard to novelty, inventive step and industrial applicability Lack of unity of Invention
- ☐ · Box No. IV
- Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial Rox No. V applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the International application
- EURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the international Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1 bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

For further details, see notes to Form PCT/ISA/220.

Name and malling address of the ISA:

European Patent Office D-80298 Munich Tel, +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465

Authorized Officer Schoever, M

Telephone No. +49 89 2399-2136



.WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No. PCT/IB2004/001373

		o. I Basis of the opinion
1.	the lan	gard to the language, this opinion has been established on the basis of the international application in guage in which it was field, unless otherwise indicated under this item.
	lar (u	is opinion has been established on the basis of a translation from the original language into the following iguage , which is the language of a translation furnished for the purposes of international search nder Rules 12.3 and 23.1(b)).
2.	With re	gard to any nucleotide and/or amino acid sequence disclosed in the international application and sary to the claimed invention, this opinion has been established on the basis of:
	a. type	of material:
		a sequence listing
		table(s) related to the sequence listing
	b. forn	nat of material:
		in written format
		in computer readable form
	c. time	e of filling/furnishing:
		contained in the international application as filed.
		filed together with the international application in computer readable form.
		furnished subsequently to this Authority for the purposes of search.
3	h	n addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto as been filed or furnished, the required statements that the information in the subsequent or additional opies is identical to that in the application as filed or does not go beyond the application as filed, as ppropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No. PCT/IB2004/001373

Box No. II Priority

- The following document has not been furnished:

 - ☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).
 - Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.
- 2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43bis.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
- Additional observations, if necessary:

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, Inventive step or industrial applicability; citations and explanations supporting such statement

Statement

 Novelty (N)
 Yes: Claims No: Claims
 1-7

 Inventive step (IS)
 Yes: Claims No: Claims
 1-7

 Industrial applicability (IA)
 Yes: Claims
 1-7

2. Citations and explanations

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

Claims

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

T 4 / 207 / Innue 200 4

Re Item V.

- The following documents are referred to in this communication:
 - D1: "MUNICH MEETING OF MPEG-4 WORKING GROUP. REPORT ISO/IEC JTC1/SC29/WG11 MPEG4/N1172" INTERNATIONAL ORGANIZATION FOR STANDARDIZATION - ORGANISATION INTERNATIONALE DE NORMALISATION, XX, XX, 1996, pages 3-49, XP002047798
 - D2: EBRAHIMI T: "MPEG-4 video verification model: A video encoding/decoding algorithm based on content representation" SIGNAL PROCESSING. IMAGE COMMUNICATION, ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, NL, vol. 9, no. 4, 1 May 1997 (1997-05-01), pages 367-384, XP004075336 ISSN: 0923-5965
 - D3: EP 0 891 093 A (MATSUSHITA ELECTRIC IND CO LTD) 13 January 1999 (1999-01-13)
- 2 Inventive Step
- 2.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject matter of claims 1, 2, 4, 5, 6 does not involve an inventive step in the sense of Article 33(3)PCT.
- 2.1.1 Document D1, which is considered to represent the most relevant state of the art to the subject matter of claim 1, discloses:

An encoding method which is applied to an input video sequence corresponding to successive scenes subdivided into video object planes (see abstract) and generating, for coding all the video objects of said scenes, a coded bitstream the content of which is described by means of a bitstream syntax allowing to recognize and decode all the elements of said content, including temporal prediction, in which the temporal prediction being chosen within a list comprising (see paragraph 3.3.2) the following situations:

- the temporal prediction is formed by directly applying the morion field sent by the encoder on one or more reference pictures;
- the temporal prediction is a copy of a reference image;
- the temporal prediction is formed by the temporal interpolation of the